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CDX1 protein expression in normal, metaplastic, and neoplastic human alimentary tract epithelium.

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BACKGROUND & AIMS: CDX1 is an intestine-specific transcription factor expressed early in intestinal development that may be involved in regulation of proliferation and differentiation of intestinal epithelial cells. We examined the pattern of CDX1 protein expression in metaplastic and neoplastic tissue to provide insight into its possible role in abnormal differentiation. METHODS: Tissue samples were stained by immunohistochemistry using an affinity-purified, polyclonal antibody against a peptide epitope of CDX1. RESULTS: Specific nuclear staining was found in epithelial cells of the small intestine and colon. Esophagus and stomach did not express CDX1 protein; however, adjacent areas of intestinal metaplastic tissue intensely stained for CDX1. Adenocarcinomas of the stomach and esophagus had both positive and negative nuclear staining for CDX1. Colonic epithelial cells in adenomatous polyps and adenocarcinomas had a decreased intensity of staining compared with normal colonic crypts in the same specimen. CONCLUSIONS: CDX1 may be important in the transition from normal gastric and esophageal epithelium to intestinal-type metaplasia. The variability in expression of CDX1 in gastric and esophageal adenocarcinomas suggests more than one pathway in the development of these carcinomas. The decrease of CDX1 in colonic adenocarcinomas may indicate a role for CDX1 in growth regulation and in the maintenance of the differentiated phenotype.

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